

What is claimed is:

1. Apparatus which authenticates a digital representation of an object from which an analog form may be made, the apparatus comprising:

5        an authenticator which uses first information in a first portion of the digital representation to produce first authentication information, the first information also being obtainable from a third portion of the analog form that is made from the first portion; and

          an incorporator which incorporates the first authentication information in a second portion of the digital representation, the authentication information also being obtainable from a fourth  
10    portion of the analog form that is made from the second portion.

2. The apparatus set forth in claim 1 wherein:

          the digital representation includes items of data, each item has more significant components and less significant components, the first portion is certain more significant  
15    components of the item, and the second portion is certain less significant components of the item.

3. The apparatus set forth in claim 2 wherein:

          the items are pixels and the components are bits in the pixels.

20    4. The apparatus set forth in claim 2 wherein:

          the items are signal samples and the components are bits in the signal samples.

5. The apparatus set forth in claim 1 wherein:

the digital representation includes an image, the first portion is a first specific region of the image, and the second portion is a second specific region of the image.

5 6. The apparatus set forth in claim 1 wherein:

the digital representation includes a document layer and an image layer, the first portion is the document layer, and the second portion is the image layer.

7. The apparatus set forth in claim 1 wherein:

10 the first portion is vector data in the object.

8. The apparatus set forth in claim 1 wherein:

the first portion is content codes in the object.

15 9. The apparatus set forth in claim 8 wherein:

the content codes are codes that represent alphanumeric characters; and

the digital representation includes a document layer that contains the content codes and an image layer; and

the first portion is the document layer and the second portion is a specific region of the  
20 image layer.

10. The apparatus set forth in claim 1 wherein:

the first portion is metadata in the object.

11. Apparatus for determining authenticity of a digital representation of an object, the

5 digital representation including embedded first authentication information and the apparatus comprising:

a storage system in which stored second authentication information is associated with stored reference codes; and

10 a processor which receives the digital representation and a reference code associated therewith, the processor including

an authentication information reader and

the processor employing the reference code to retrieve the second authentication information associated therewith from the storage system, employing the authentication information reader to read the embedded first authentication information, and employing the read  
15 first authentication information and the second authentication information to determine authenticity of the digital representation.

12. The apparatus set forth in claim 11 wherein:

the reference code is included in the digital representation.

13. The apparatus set forth in claim 11 wherein:

the second authentication information is based on semantic information contained in the digital representation; and

the authentication information reader includes a semantic information reader and an

5 authentication information maker,

the semantic information reader reading the semantic information from the digital representation and the authentication information maker producing the first authentication information from the read semantic information.

10 14. Apparatus for checking the authenticity of an analog form, the analog form including embedded first authentication information and the apparatus comprising:

an analog form converter that receives the analog form and makes a digital representation of at least the first authentication information; and

a communications system,

15 the analog form converter employing the communications system to send the digital representation and a reference code to a verification system that employs the reference code and the first authentication information to determine whether the analog form is authentic and to receive a notification whether the analog form is authentic from the verification system.

20 15. The apparatus set forth in claim 14 wherein:

the reference code is included in the digital representation.

16. The apparatus set forth in claim 14 wherein: the verification system employs the reference code to locate a key that is required to read the first authentication information.

5        17. The apparatus set forth in claim 14 wherein: the verification system employs the reference code to locate second authentication information and additionally uses the second authentication information to determine whether the digital representation is authentic.

18. The apparatus set forth in claim 14 wherein: the analog form includes an image in  
10    which the first authentication information is embedded.

19. The apparatus set forth in claim 18 wherein: the analog form is a photo ID, the image is the photo ID's photo, and the reference code is an identification number for the photo ID.

15        20. A method of determining authenticity of a digital representation of an object, the digital representation including embedded first authentication information and the method including the steps performed in a data processing system of:

receiving the digital representation and a reference code associated therewith in the system;

using the reference code to retrieve second authentication information associated with the reference code;

reading the embedded first authentication information; and

employing the read first authentication information and the second authentication

5 information to determine authenticity of the digital representation.